

28 July 1965

DEVELOPMENT OBJECTIVE

Super Wide Print Straightener

1. Introduction:

Photographic papers are emulsion coated on one side only; this results in differential drying of the two sides of the paper causing contraction of the emulsion and a decided curl toward the emulsion side.

Although commercial print straighteners will not accommodate prints larger than 14" in width, there does not appear to be any technical reason to prevent their being made to accommodate larger print sizes.

2. Concept:

Briefing prints are frequently made in sizes up to 40 inches in width. It is intended that this print straightener will be used to remove the curl from paper prints, thus permitting their use without the necessity of mounting. It is further intended that the equipment be of such weight and size that it may be readily moved from one location to another. It is assumed the design of the equipment will require electricity for its operation and will make use of liquids for generation of moisture or vapor. Any solution used must be non-injurious to the emulsion.

Declass Review by
NGA.

3. Scope:

This project is for the development, design, fabrication, test and evaluation of a prototype model of a print straightener to accept paper prints up to 40 inches in width. Literature requirements will include a final report on the development and such specification and drawings as may be required to permit subsequent procurement of the equipment.

4. Philosophy:

There are several methods presently being used to accomplish this purpose; one is to stretch the emulsion by passing the print over a series of rollers with the paper base next to the roller. This method sometimes damages the emulsion. The more acceptable method makes use of a combination of rollers and the application of moisture. The moisture technique is acceptable, however, any method may be used so long as it meets other requirements stated herein and does not damage the print or the emulsion, or have any adverse effects on dry mounting.

5. Requirements:

Physical - the print straightener shall consist of a feed table, belts, or rollers as may be necessary to transport the prints through the equipment and a basket or container to receive the finished prints. If water moisture or other vapor is required the equipment

shall include a removable tank to contain the liquid, a flexible line input and automatically controlled solution level in the tank. If heat is required for the generation of moisture or vapor, electric heating elements shall be contained in the body of the tank or shall be a securely attached immersion type heater. Either method shall include thermostatic control.

This print straightener shall be capable of accepting either single or double weight black and white paper prints of the commercial variety (such as Kodabromide, enlarging; or AZO, contact;) in any width from 70mm to 40 inches at continuously variable speeds up to 60 running feet per minute. The equipment shall be as light and compact as is consistent with other requirements. The equipment shall not exceed 50 inches in width or 80 inches in length, including the feed platform and the take up receptacle. The equipment is intended to be table mounted. However, if the total weight exceeds 100 pounds it shall be provided with stand and casters.

Electrical - The equipment shall be designed to operate on 110-120 volt 60 cycle single phase AC, with a maximum power load not to exceed 15 amps.